

STUDIES IN THE LIABEAE (ASTERACEAE). III.

NOTES ON THE GENUS, CACOSMIA.

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The genus Cacosmia HBK was described in 1818 with a single species, C. rugosa, from southern Ecuador. The locality was erroneously given as Peru but the species has since been found in Peru also. A second name, C. quinquenervia Steud., has appeared only in synonymy, but the genus has continued to contain a single described species. In 1901 in his treatment of the Lehmann collections Hieronymus did recognize some diversity in Cacosmia which he treated at the varietal level. The typical variety has articulated hairs on the stems and stipules, ovate to broadly elliptical serrate leaves, and involucre with only the tips of the outer phyllaries violaceous. The variety arachnoidea Hieron. of southern Ecuador had evanescent arachnoid pubescence without intermixed articulated hairs, narrow entire leaves, and dark phyllaries. The variety nivea Hieron. from Peru combined the leaf form and phyllary color of the typical variety with the pubescence of variety arachnoidea. No taxonomic changes have occurred in Cacosmia since the work of Hieronymus.

The genus Cacosmia has been reviewed recently with the intent to treat the genus in the Liabeae of Ecuador. Help has been obtained from new collections from Ecuador by R.M. King with comments on habit and on presence or absence of milky sap. The review has served to emphasize the differences in the extreme variants of the genus as they occur in Ecuador and to indicate that they should be treated as separate species. Another local variety has also been recognized in southern Ecuador and northern Peru. The present treatment puts more emphasis on differences of leaf form and recognizes strictly pubescence differences at the varietal level.

Cacosmia hieronymi H. Robinson, sp. nov.

Plantae frutescentes 1.0-1.5 m altae saepe dense ramosae. Caules teretes striati castanei arachnoideo-pubescentes glabrescentes, internodiis plerumque 1-4 cm longis. Folia opposita, stipulis connatis vaginatis arachnoideo-pubescentibus sine aut fere sine pilis articulatis glabrescentibus, petiolis 1-2 mm longis;

laminae ovato-lanceolatae vel lanceolatae plerumque 2.0-4.5 cm longae et 0.5-1.5 cm latae margine integrae vel bullato-crenulatae apice acutae supra bullatae in bullis glabrae subtus dense tomentosae obscure glanduliferae fere ad basem trinervatae. Inflorescentiae dense corymbosae vel breviter paniculatae, ramis dense tomentosae; capitula 7-8 mm alta; squamae involucre ca. 25 ca. 5-6-seriatae 1-7 mm longae ovatae vel anguste ellipticae omnino aut plerumque purpurascens apice anguste rotundatae minute fimbriatae extus glabrae; flores radii 5; corollae flavae, tubis ca. 2 mm longis glanduliferis et hirsutis, limbis ca. 6 mm longis ellipticis; flores disci ca. 6; corollae ca. 5 mm longae extus glanduliferae inferne hirsutae, tubis indistinctis, lobis ca. 2 mm longis; thecae antherarum pallide vel parum brunnescentes 1.8-2.3 mm longae, appendicibus ca. 0.3 mm longis. Achaenia 1.5-2.0 mm longa glabra; pappus nullus.

TYPE: ECUADOR: Azuay: along the road to Loja, ca. 6 kms generally SE of Cumbe, several shrubs to 1  $\frac{1}{2}$  m tall, open area, flowers yellow. Elev. ca. 9600 ft. Feb. 4, 1974. King 6702 (Holotype US). Paratypes: ECUADOR: Mountains of Cuenca and Loja, W. Jameson (US, NY). AZUAY-LOJA: Nudo de Cordillera Occidental y Cordillera Oriental entre Oña y Rancho Ovejero. Between Cumbe (2704 m) and cerca 2800 m, on south-bound road. Barclay & Juajibioy 8435 (US). AZUAY: Along the río Tarquí, 4-18 km south of Cuenca; 8300-9000 ft. elev., bases of cliffs, Camp E-1890 (US, NY); Vicinity of Cuenca; 8200-8900 ft. elev. Near union of ríos Tarquí and Yanuncay. Camp E-2635 (NY); Vicinity of Cuenca; 8200-8900 ft. elev. Along río Milchichic. Camp E-2722 (NY); Along the road to Loja, ca. 39 kms S of Cumbe. Elev. ca. 10,200 ft. Locally common shrubs 1 m tall, flowers yellow, no apparent milky sap. King & Garvey 6903 (US); Páramo Alpacada, along Pan-American Highway 82 km south of Cuenca, alt. 9500 ft. Wiggins 10810 (US, NY). CANAR: Vicinity of Santa Rosa de Cañar. Rose 22666 (US). LOJA: On road from Loja to Cuenca; elev. 2900 m. Dodson & Thien 854 (US); Saraguro (unos 50 km N. Loja) 2500 m.s.m. Espinosa 1408 (NY); Between San Lucas and Oña. Alt. 2200-3100 m. Hitchcock 21569 (US).

The new species has a distinctive appearance in the narrower lanceolate leaves without obvious teeth in contrast to the oblong or broadly elliptical toothed leaves of C. rugosa. The inflorescence also is usually condensed into one or a few simple often sessile clusters. The most paniculate forms of the inflorescence are like the least developed forms in

C. rugosa. The new species has phyllaries usually mostly purplish while C. rugosa has phyllaries yellowish to brownish with at most the tips purple. A key to the Ecuadorian material of the genus could utilize the difference in stem pubescence, glabrescent arachnoid pubescence without intermixed coarser articulated hairs in C. hieronymi versus mostly coarse articulated persistent hairs in C. rugosa. The C. hieronymi type of pubescence is found, however, in the C. rugosa var. nivea which is known from central Cajamarca south to Huanuco in Peru. The recent King collections from Ecuador have one other possible character of significance. The King 6903 is noted as having no apparent milky sap while a specimen of C. rugosa var. kingii similarly tested had milky sap. The reliability of the character is yet to be proven. The northernmost specimen of the new species, Rose 22666 from Cañar, has a few small teeth on some of the leaves which might indicate introgression with C. rugosa, but other characters are as in typical C. hieronymi.

The new species is evidently the entity named by Hieronymus as Cacosmia rugosa var. arachnoidea, but it has seemed best to provide a new name at the species level with a new type specimen.

Cacosmia rugosa var. kingii H. Robinson, var. nov.

Caules hirsuti, pilis articulatis persistentibus. Folia oblongo-ovata supra in bullis pilosa. Inflorescentiae paniculatae; squamae involucri flavae brunnescentea.

TYPE: PERU: CAJAMARCA: Tabaconas, on Río Tabaconas, 20 km e.s.e. Huancabamba, Prov. de Jaen, gently sloping alluvial fan, somewhat dissected, with grassy pasture, thickets and scattered shrubs. Alt. 1900 m. Common on edges of ravines, shrub 1 m tall; flowers yellow. June 11, 1947. F.R. Fosberg 27777 (Holotype US). Paratypes: PERU: CAJAMARCA: Prov. Jaen: Above Tabaconas, 2300 m. Weberbauer 6304 (US). ECUADOR: LOJA: Along the road to Zamora, ca. 2 kms E of Loja. Elev. ca. 7000 ft., common shrubs 1 m tall, open sun, flowers yellow, sap milky, King & Garvey 6913 (US).

The three specimens all show the distinctive pubescence on the upper surface of the leaves. The bullate surfaces are nearly or completely glabrous in all other specimens of the species. Other characters of C. rugosa var. kingii are as in typical C. rugosa and the former is geographically restricted to areas entirely within the range of the latter. The specimens

are from both Ecuador and Peru but in closely adjacent areas that suggest a natural range along the eastern slopes of the Andes from near Loja in the north to Tabaconas in the south.

## LITERATURE CITED

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